A. F. de Fourcroy's report to the Convention. The Ecole Centrale des Travaux Publics opened on 1 "nivöse An III" (21 Dec. 1794). It was only on 22 August 1795 that it took the name "Ecole Polytechnique," which it still bears.

Langins essentially bases his study on new sources, in particular the diary, entitled "Journal de l'Ecole Centrale des travaux Publics," written by Charles Gardeur-Lebrun, who was the first student inspector, from the eve of the school's opening on 20 December 1794 to 9 November 1795. Langins minutely describes day-to-day life at the school. The reader will learn, for instance, that the young revolutionary students, much like today's, were inclined to arrive at school late in the morning and did not attend lectures they disliked.

Langins's most valuable contribution is a survey of the "cours révolutionnaires" delivered at the Ecole Centrale des Travaux Publics during its first three months. The students, coming from all parts of France, were supposed to study the "generality of each science" that formed the "Programmes de l'enseignement polytechnique de l'Ecole centrale des travaux publics," published on 18 February 1795 (reproduced here as an appendix). In order to get the school under way more quickly, Fourcroy proposed the use of the Jacobin method of "cours révolutionnaires," already tested for training citizens in the fabrication of gunpowder and saltpeter from 19 February to 19 March 1794, and in use both at the Ecole de Mars from June to September 1794 and at the Ecole Normale de l'An III from October 1794. Langins, however, points out that the lectures at the Ecole Centrale des Travaux Publics differed from their precursors. The purpose was not to train in three months engineers who could be immediately employed and who would be capable of transmitting their knowledge to others. The courses were intended to provide no more than a foundation for further studies. Once the students had reached an appropriate level, they were spread within the three classes provided for in the definitive organization, which included a three-year *cursus*. The teaching methods of the Ecole Polytechnique were inspired by those of the Ecole du Génie de Mézières, with theoretical lectures followed by practical exercises.

Langins stresses that the simultaneous teaching of all the subjects in the Ecole Polytechnique's program was probably also designed to provide a means of subsistence for the numerous scientists left without resources by the suppression of the Academie Royale des Sciences and to ensure the continuity of an institution created in difficult political circumstances.

Unlike the Ecole Normale de l'An III, the Ecole Polytechnique has survived the conditions that made its creation necessary: a dramatic need for technical officers for the army and the nation. Though the emphasis was on the practical, the programs of the Ecole Centrale des Travaux Publics were broadly encyclopedic, as Langins reminds us. The Ecole Polytechnique was wholly the daughter of Diderot's *Encyclopedie* and of the French Revolution. In one respect, therefore, it was typically an Enlightenment institution, even though it was to become a model for many later engineering schools, such as the Ecole Centrale des Arts et Manufactures.

The publication of these two studies on the Ecole Polytechnique, coming after the 1986 reprint of *Enseignement et diffusion des sciences en France au 18ème siècle,* edited by René Taton, and Dominique Julia's study of the Revolution's educational plans (*Les trois couleurs du tableau noir: La révolution:* Paris, 1981), should encourage scholars to increase our knowledge not only of the prestigious Ecole Polytechnique but also of other educational institutions that contributed equally to the scientific and technical development of France throughout the nineteenth century.

BERNADETTE BENSAUDE-VINCENT
THÉRÈSE CHARMASSON

■ Social Relations of Science

Henry H. Bauer. *The Enigma of Loch Ness: Making Sense of a Mystery.* xii + 243 pp., illus., apps., bibl., index. Urbana/Chicago: University of Illinois Press, 1986. $22.95.

Having read a great many books on hypothetical anomalies, and being reasonably knowledgeable in this field, I found Henry Bauer's book splendid. It contains, on the Loch Ness Monster(s), a great deal that one needs to know. Indeed, one could wish that there were such a book for UFOs and for many other similarly hypothetical phenomena.

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But it is important to note that this is basically a sociological work. Bauer's intent is to show how there can be such a marked division of opinion about "Nessies." This he does extremely well. One picks up information about the creatures from his text essentially in passing. Bauer has been meticulous with details. The number of helpful observations and pertinent facts is quite large. In fact, these are sometimes presented in overly dense fashion, and one longs for a bit of simple narration. But never mind: this is the one book that absolutely must be read before starting out on the subject. How else might one discover that the "first" sighting in 1933 was probably a hoax? And in this business, as Bauer rightly observes, "you can't tell the players without a scorecard." Bauer provides the scorecard. He seems to have read everything and talked to everybody who knows anything about Nessie.

There is only one area in which Bauer seems to possess a blind spot, and that is the focus on Loch Ness as the site in which the monster-hunters are interested. As Bauer well knows, reports of this species or others very similar to it come from a great many lakes (e.g., the Payette Lakes in Idaho) where the water does not present the incredible barrier to visual or photographic observation Loch Ness's peaty water does. Because Bauer's blind spot is widely shared by others in the invisible college of Nessie researchers, scientific effort continues to be focused on Loch Ness and the species is still labeled "the Loch Ness Monster." This skewing of effort needs to be corrected. The species might well have been identified before this time if research had been carried out where viewing conditions are less unfavorable.

The text itself is relatively short (157 pages). Bauer's appendixes include a comprehensive listing of sightings and sources, as well as a helpful bibliography. This book is indispensable for those interested in its subject.

RON WESTRUM

Alain Corbin. *The Foul and the Fragrant: Odor and the French Social Imagination.* Translated by **Miriam Kochan.** vii + 307 pp., index. Cambridge, Mass.: Harvard University Press, 1986.

Historians of science and medicine may know Alain Corbin for his brilliant social and cultural history of prostitution in modern France, *Les filles de noce* (1978), in which he explored the points of intersection of law and medical practice in the regulation of venereal disease. In this more ambitious work, Corbin attempts no less than a history of the perception and meaning of odor in France and Western Europe between the end of the seventeenth century and the origins of the Pasteurian revolution. Corbin's claim is that historians of science and medicine have ignored this fertile field of inquiry because pre-Pasteurian hygienists simply did not understand the germ theory of disease, so that their theorizing on the subject is deemed unworthy of study. Whatever the reason for this lacuna, Corbin's exhaustive exploration of a vast range of scientific, medical, and cultural materials clearly reveals that pre-Pasteurian doctors relied heavily on their noses to identify and classify hazards to public health.

Corbin shows that a medical semiology of smells was firmly embedded in scientific accounts of putrefaction and decomposition of organic materials, in beliefs about the role air, water, light, and heat played in advancing or retarding them, and in the characteristic odors these processes produced. This theory of miasmas was compatible with both the infection and contagion explanations of disease, since each relied heavily on air as an element of transmission. As concern about public health, particularly in the cities, advanced in the eighteenth century, officials made efforts to clean up the sources of foul and dangerous smells: roads were paved, swamps were drained, cesspools emptied, and garbage dumps relocated. Success in these campaigns was measured by the diminution of odors. Hygienists then noted significant improvements in the health of the populations, a significant example of the phenomenon that mistaken theories may nonetheless produce practical success for the wrong reasons. These advances encouraged health officials to extend their sanitation methods to prisons, hospitals, barracks, and indeed the whole sphere of public life.

This aspect of Corbin's story unfolds within a larger frame of reference determined by the rise of middle-class civilization, the development of individualism, and the appearance of a new, refined sensibility that could no longer tolerate the concen-

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